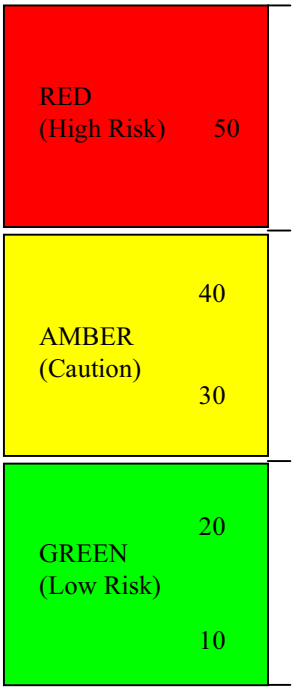
Calculating Risk



To compute the total level of risk for the six elements, assign a risk code of 0 (For No Risk) through 10 (For Maximum Risk) to each element. This is your personal estimate of the risk. Add the risk scores to come up with a total risk score.The mission risk can be visualized using the colors of a traffic light. If the total falls in the green zone, risk is at a minimum. If the total falls in the amber zone, risk is moderate and you should consider adopting procedures to minimize risk. IF THE TOTAL FALLS IN THE RED ZONE, YOU NEED TO IMPLEMENT MEASURES TO REDUCE THE RISK PRIOR TO STARTING THE EVENT/EVOLUTION.

TEAM DISCUSSION TO UNDERSTAND THE RISKS AND HOW THEY WILL BE MANAGED IS WHAT IS IMPORTANT; NOT THE ABILITY TO ASSIGN NUMERICAL VALUES OR COLORS TO RISK ELEMENTS.

GAR EVALUATION SCALE

SUPERVISION	
PLANNING	
CREW SELECTION	
CREW FITNESS	
ENVIRONMENT	
EVENT/EVOLUTION COMPLEXITY	

Supervision — **Supervisory Control should consider how qualified the supervisor is and is supervision taking place. Even if a team member is qualified to perform a task, supervision acts as a control to further minimize risk. This may simply be someone checking what is being done to ensure it is correct. The higher the risk, the more the supervisor needs to be focused on observing and checking. A supervisor who is actively involved in a task (doing something), can be easily distracted and should not be considered an effective safety observer in moderate to high risk situations.**

Planning — **Planning and preparation should consider how much information you have, how clear it is, and how much time you have to plan the evolution or evaluate the situation**

Crew Selection — **Crew Selection should consider the qualifications and experience level of the individuals used for the specific event/evolution. Individuals may need to be replaced during the event/evolution. The same concerns apply to the reliefs.**

Crew Fitness — **Crew Fitness should consider the physical and mental state of the crew. This is a function of the amount and quality of rest a crew member has had. Quality of rest should consider how the ship rides, its habitability, potential sleep length, and any interruptions. Fatigue normally becomes a factor after 18 hours without rest; however, lack of quality sleep builds a deficit that worsens the affects of fatigue.**

Environment — **Environment should consider factors affecting personnel performance and factors affecting the performance of the ship and its boats or attached aircraft. This includes, but is not limited to, time of day, temperature, humidity, precipitation, wind and sea conditions, proximity to aerial/navigational hazards and other exposures (e.g. oxygen deficiency, toxic chemicals, and/or injury from falls and sharp objects).**

Event/Evolution Complexity — **Event/Evolution complexity should consider both the required time and the situation. The longer exposed to a hazard, the greater the risks. The situation includes considering how long the environmental conditions will remain stable and the complexity of the work.**

TOTAL _____ _____

The GAR model can address more general risk concerns, which involve planning operations, or reassessing risks as we reach milestones within our plans.

Specific Hazard : _____ Risk = S x P x E = _____

Severity (S) : Describes potential loss or consequences of a mishap (I.e. extent of injury, illness, equip damage, mission degradation).

0 = No Potential For Loss
1 = Slight
2 = Minimal
3 = Significant
4 = Major
5 = Catastrophic

Risk Controls Used: PPE, Engineering Controls, protective devices.

Probability (P) : Likelihood that consequences will occur.

0 = Impossible
1 = Remote under any conditions
2 = Unlikely under normal conditions
3 = About 50-50
4 = Greater than 50%
5 = Very Likely to Happen

Risk Controls Used: Training, Awareness, Attitude Change

Exposure (E) : Amount of time, number of people involved, number of repetitions.

0 = No Exposure

1 = Below average
2 = Average
3 = Above average
4 = Great

Risk Controls Used: Reducing the number of people involved, the number of events, cycles, evolutions, etc.

Circle Resultant Risk Level:

Values	Risk Level	Action
80-100	Very High	Discontinue, Stop
60-79	High	Immediate Correction
40-59	Substantial	Correction Required
20-39	Possible	Attention Needed
1-19	Slight	Possibly Acceptable
0	None	None

Definitive action required for risk levels rated from substantial to very high.

TEAM DISCUSSION, THE UNDERSTANDING OF THE RISKS INVOLVED AND HOW RISK IS TO BE MANAGED, IS WHAT IS IMPORTANT; NOT THE ABILITY TO ASSIGN NUMERICAL VALUES TO RISK!

The SPE model can address specific hazards, such as those involved in launching or recovering a small boat or the meeting of two vessels in a congested waterway.